

USPS-T-3

BEFORE THE  
POSTAL RATE COMMISSION  
WASHINGTON, D. C. 20268-0001

PROCEEDINGS  
MAR 18 3 15 PM '99

CLASSIFICATION AND FEES FOR  
WEIGHT-AVERAGED, NONLETTER-SIZE  
BUSINESS REPLY MAIL, 1999

DOCKET NO. MC99-2

DIRECT TESTIMONY  
OF  
LESLIE M. SCHENK  
ON BEHALF OF  
UNITED STATES POSTAL SERVICE

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## **AUTOBIOGRAPHICAL SKETCH**

My name is Leslie M. Schenk. I am a Senior Economist with Christensen Associates, which is an economic research and consulting firm located in Madison, Wisconsin. I have been employed at Christensen Associates since June, 1995. During my tenure at Christensen Associates, I have worked on many research projects for the U.S. Postal Service.

In 1982 I received a B. A. from SUNY College at Buffalo, with a major in economics and a minor in mathematics. I received an M.A. in economics and an M.A. in mathematics (with a concentration in statistics) from Indiana University in 1984 and 1986, respectively. In 1995 I received a Ph.D. in economics from Michigan State University.

From 1985 to 1986 I was a research assistant on the economic forecasting modeling project at the Indiana University Business School. There I was responsible for quarterly economic forecasts for industry clients. From 1986 to 1989 I was a demand analyst for Indiana Bell Telephone Company. Among my duties there, I helped prepare analyses for rate case filings before the Public Service Commission of Indiana. I also provided in-house statistical consultation. From 1993 to 1995 I worked as a research assistant at the Institute for Public Policy and Social Research at Michigan State University. My research there was on nonprofit organizations. From 1983 to 1993, I taught numerous economics, business statistics, and mathematics courses.

My recent research for the Postal Service has involved a number of in-field surveys to support Docket Nos. MC95-1 and MC96-2. I have been a witness on BRM costs in Docket Nos. MC97-1 and R97-1.

1     **I.     Purpose of Testimony**

2             The purpose of this testimony is to report on the costs of counting, rating,  
3     and billing nonletter-size Business Reply Mail (BRM) using weight averaging, a  
4     methodology tested in the nonletter-size BRM experiment. At the request of the  
5     United States Postal Service, Christensen Associates conducted the data  
6     collection for the nonletter-size BRM experiment and the special cost study that  
7     supports this testimony.

8             My testimony also describes the weight averaging software designed by  
9     Christensen Associates as part of the experiment.

10

11     **II.    Introduction**

12             This testimony presents cost estimates for weight averaging, which is one  
13     method to count, rate, and bill nonletter-size BRM. The cost estimates for weight  
14     averaging are based on the experience of three post offices rating nonletter-size  
15     BRM for three experiment participants.<sup>1</sup> All experiment participants are through-  
16     the-mail film processors that use BRM to receive exposed film from customers.

17             The analysis presented here is based on data collected on every phase of  
18     the daily and monthly activities associated with using weight averaging to count,

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<sup>1</sup> Data on the experiment customers reported in this testimony will not be identified by customer name to protect proprietary information. A fourth participant switched from reverse manifesting to weight averaging in September 1998, just as we were completing the field data collection for the special cost study which serves as the basis for my testimony. Therefore, for purposes of estimating weight averaging costs, I have only relied on data collected at the three sites which had more than a half-year's experience with weight averaging. Given that the weight averaging procedures used for the fourth site are the same as those used in the other three sites, the cost estimates should not be materially impacted by this site's absence from this analysis.

1 rate, and bill the participant's nonletter-size BRM. This analysis also uses the  
2 results of a special cost study conducted at each experiment site.

3

### 4 **III. Weight Averaging Procedures**

#### 5 **A. Weight Averaging**

6 Weight averaging is a method developed by the Postal Service to count,  
7 rate, and bill nonletter-size BRM in a cost-effective manner. Instead of  
8 individually rating each BRM piece received, the Postal Service reduces costs  
9 when using weight averaging by rating the mail in bulk, using statistically valid  
10 methods to determine the postage and fees due for this mail.

11 In weight averaging, the BRM received is weighed in bulk each day. The  
12 total weight of the mail received each day is converted to postage and fees due  
13 by multiplying the net bulk weight by a postage-per-pound conversion factor.  
14 The postage-per-pound conversion factor includes the First-Class Mail postage  
15 as well as the BRM fee. Periodically, a sample of pieces is drawn from which a  
16 new postage per pound conversion factor is calculated. Also, a pieces-per-  
17 pound conversion factor is calculated from the periodic sample, and this is used  
18 to estimate the volume of mail received.

19 The weight averaging procedures used at each of the sites participating in  
20 the experiment are identical.

21

1    **B. Experiment Design**

2            As described in Docket No. MC97-1, USPS-T-2, the methodology used to  
3    rate the participants' nonletter-size BRM during the experiment was based on  
4    limited information collected prior to the beginning of the experiment. The  
5    experiment was designed to collect enough information to determine the cost  
6    and reliability of this method of rating nonletter-size BRM and what standards  
7    should be employed to protect postal revenues. The data collection phase for  
8    each participating site was to be at least one year in length. This length of time  
9    for data collection allowed for any seasonal effects in volumes received by  
10   participants to be studied. Seasonal variations in the distribution of piece  
11   weights received affect the sample design needed to calculate the conversion  
12   factors, which in turn affects the costs associated with sampling.

13           On a daily basis, each post office weighs the incoming nonletter-size BRM  
14   in bulk (usually in sacks) and records the sack weights in a software program  
15   specially designed for weight averaging (see the Appendix for a description of  
16   the weight averaging software). Using the current conversion factors, the weight  
17   averaging program automatically calculates the estimated postage due and  
18   volume received for each sack, thus eliminating manual calculations. When all  
19   of the incoming BRM for the customer has been received and recorded, the BRM  
20   clerk then prints out a report from the program that shows the total estimated  
21   volume received and postage due for the day. Information from this report is  
22   then recorded in the PERMIT system, using a computer screen specially  
23   designed for weight averaging.

1           Once each accounting period (AP), sampling is done to update the  
2   conversion factors. For five consecutive days during a randomly selected week  
3   in each AP, the BRM clerks record the weights of all mail pieces from  
4   approximately twenty<sup>2</sup> randomly selected sacks in the weight averaging software,  
5   using an electronic scale linked with the computer on which the software is  
6   installed. The software automatically calculates and records the postage and  
7   fees for each sample piece. At the end of the sample period, the program  
8   automatically calculates the new conversion factors based on the piece weights  
9   and postage and fees due for all sample pieces recorded during the current  
10   sample period. The program then uses these new conversion factors to count  
11   and rate the incoming BRM until the next sampling period is over, when new  
12   conversion factors are calculated in the same manner. Sample periods are  
13   randomly chosen each AP (see Exhibit USPS-3A for the data collection phase  
14   sample schedule).

15           The weight averaging process is designed to provide a cost-effective  
16   method to rate large quantities of nonletter-size BRM. The weight averaging  
17   process is designed to provide annual revenue estimates within a  $\pm 1.5$  percent  
18   level of precision. The weight averaging software program is designed to  
19   provide an accurate, cost-effective way to calculate the postage and fees due for

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<sup>2</sup> The target number of sacks to sample each sample period is 20. Given the algorithm for selecting the random sacks (see the Appendix), the actual number of sacks varies by sample period. On average, 21 sacks per site were selected each sample period during the data collection phase of the experiment.



1 nonletter-size BRM, calculate the conversion factors, and automate the data  
2 collection and analysis aspects of the experiment.

3

#### 4 **C. Analysis of the Sampling Methodology**

5 One major component of the costs of counting and rating nonletter-size  
6 BRM using weight averaging is the workload associated with the periodic  
7 sampling. In this section, the experiment sample design will be evaluated with  
8 respect to the accuracy of the revenue estimates obtained under this design.

9 In order to evaluate the reliability of revenue estimates obtained under the  
10 experiment design, it is necessary to determine the variability of the postage per  
11 pound conversion factor. A bootstrap<sup>3</sup> procedure is used to measure this  
12 variability.

13 Table 1 presents the results of the bootstrap analysis on the experiment  
14 results. As these results show, the estimated revenue during the data collection  
15 phase of the experiment was within 0.54 percent of the true revenue for Mailer  
16 1's nonletter-size BRM, within 0.56 percent for Mailer 2, and within 0.75 percent  
17 for Mailer 3. These precision levels on the revenue estimates are well within the  
18  $\pm 1.5$  percent criterion established for the experiment. These results indicate that  
19 a more cost-effective sampling procedure (i.e., smaller sample size) could be

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<sup>3</sup> When the sampling methodology is more complex than simple random sampling, the calculation of the variance of the estimate is not always possible analytically. Bootstrapping is a nonparametric method which uses extensive computing to estimate variances when an analytical solution is not available. A full description of bootstrapping in this context can be found in Appendix A of Docket No. MC97-1, USPS-T-2.

- 1 used that would still obtain revenue estimates within the criterion of  $\pm 1.5$  percent  
 2 precision.

**Table 1: Precision Levels on Revenue Estimates (Experiment Design – Sample All Pieces in Twenty Sacks per AP)**

Statistics on Postage Per Pound Conversion Factor (Experiment Design)			
	Mailer 1	Mailer 2	Mailer 3
Mean Postage per Pound	6.160	6.463	6.420
Standard Deviation	0.017	0.018	0.025
Precision Level	0.54%	0.56%	0.75%

### 3 D. Proposed Design for Weight Averaging

- 4 As has been shown in part C, the current sampling procedures provide  
 5 more accuracy for revenue estimates than originally specified for the experiment.  
 6 This accuracy comes at the cost of more sampling workload than is needed to  
 7 obtain the desired precision level for revenue estimates. As Table 2 shows, a  
 8 sampling methodology where only 10 sacks<sup>4</sup> are sampled per AP would provide  
 9 revenue precision levels better than the required level of  $\pm 1.5$  percent for each  
 10 site, while reducing the periodic cost associated with sampling for weight  
 11 averaging.

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<sup>4</sup> On average, approximately 2,500 pieces per site would be sampled each AP when 10 sample sacks are selected.

**Table 2: Precision Levels on Revenue Estimates (Experiment Design – Sample All Pieces in Ten Sacks per AP)**

Statistics on Postage Per Pound Conversion Factor (10 sacks sampled per AP)			
	Mailer 1	Mailer 2	Mailer 3
Mean Postage per Pound	6.160	6.464	6.419
Standard Deviation	0.024	0.025	0.034
Precision Level <sup>5</sup>	0.77%	0.74%	1.03%

Because of seasonal variation in piece weight distributions (e.g., pieces are heavier on average in the summer months and after holidays), I have recommended that sampling be undertaken no less frequently than every AP in order to ensure that annual revenue estimates are within  $\pm 1.5$  percent of the true value. The Postal Service concurs that this is appropriate.

I have also recommended that sub-sampling within containers be avoided (for example, sampling every other piece within each sample sack), as this type of sampling could possibly add an element of nonrandomness to the process (i.e., increase the probability of a 'nonsampling error'). Nonsampling errors are more likely in this case than when sub-sampling within containers of letter or flat mail, because the pieces are not 'ordered' in the containers (as are letters in a letter tray, for example). The Postal Service concurs that sub-sampling within containers should not be part of the permanent weight averaging procedures.

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<sup>5</sup> Sampling 10 sacks per sample period for a customer with lower piece weight variation than the experiment participants would result in more precise revenue estimates.

Cost estimates are developed in Section IV for both the current sampling methodology and the recommended procedures.

#### **IV. Cost Estimation**

The cost model for weight averaging is presented in this section. First, the sources of workload and costs for weight averaging are described. The survey used to collect the cost study data is then described. In the third part of this section, the general costing methodology and assumptions are discussed. Estimated costs for the weight averaging procedure used to count, rate, and bill nonletter-size BRM are discussed in the last part of this section.

##### **A. Weight Averaging Workload and Costs**

As the process description given in Section III implies, there are three sources of workload and costs associated with rating and billing nonletter-size BRM using weight averaging. These sources are: daily bulk weighing, daily billing and accounting, and the periodic sampling.

##### **Daily Bulk Weighing**

One source of workload is the daily bulk weighing. Each day that BRM is received for the customer, a postal clerk (usually assigned to the Postage Due or BRM unit) weighs the incoming mail for that customer in bulk. The postage and fees due are estimated from the total net weight using a postage-per-pound conversion factor. The workload associated with the bulk weighing is dependent on the volume received.

1    **Daily Billing and Accounting**

2           The weight averaging postage is generally tracked through a special  
3   computer screen set up for weight averaging in the PERMIT system.<sup>6</sup> The report  
4   printed by the weight averaging software provides the information that is entered  
5   into the PERMIT system by the BRM clerk, and also is used as a record of the  
6   day's activity that is provided to the customer.

7           In addition, postal personnel at each site have informed me that because  
8   of the different nature of the process (compared to standard weighing, rating and  
9   billing of BRM), weight averaging customers require more customer contact time  
10   in regard to billing and processing matters. For example, time is spent  
11   explaining the changes in the conversion factors for the accounting period to the  
12   customer. Therefore there is additional "accounting" workload above that usually  
13   needed for other BRM customers. The workload associated with daily billing and  
14   additional accounting activities does not vary by daily volume.

15   **Periodic Sampling**

16           Each AP, a sample of pieces is taken for use in calculating new  
17   conversion factors, which are then used until the next sample is taken. The  
18   required sample size is a function of the variation in piece weights received, not  
19   a function of the daily volume received. Therefore the cost associated with  
20   sampling should be considered a fixed cost per AP.

21           Given this description of the workload and cost sources associated with

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<sup>6</sup> One experiment site does the billing manually because it is not a PERMIT site.

weight averaging, the cost model developed below includes two costs: a per-piece cost associated with the daily bulk weighing and rating workload, and a fixed cost associated with the billing, accounting, and sampling workload for each AP.

#### **B. Data Collection**

The data on workload used in this cost model were obtained through a special cost study conducted at the three participating weight averaging sites, and informed by first-hand observation of the procedures at each site. The cost study collected data on the times needed to complete all aspects of the workload associated with weight averaging over a two-week period at each site. The cost study was conducted six months or more after the start of the experiment at the site, in order that the cost estimates would not be distorted by additional costs associated with the start-up period. The two-week cost study periods for the three sites did not overlap by design. Different study periods were selected to make sure that the particular mail flow handled during the cost study period did not unduly affect the cost estimates, as well as to accommodate site scheduling conflicts (e.g., we did not want to conduct the cost study at a site when the clerk usually responsible for the weight averaging at that site was on annual leave).

The dates for the cost study at each site are given below:

<u>Site</u>	<u>Dates of the Cost Study</u>
Site 1	June 29 – July 10, 1998
Site 3	July 20 – July 31, 1998
Site 2	September 14 – 26, 1998

1 Training on how to complete the cost study forms was given in person by  
2 Christensen Associates personnel to all postal personnel at each site involved  
3 with the weight averaging procedures for the participating customers.

4 The cost study forms were sent daily to Christensen Associates, where  
5 they were reviewed for any inconsistencies. The cost study form and  
6 instructions are presented in Exhibit USPS-3B.

7

#### 8 **C. Methodology and Assumptions**

9 The cost estimates for the weight averaging method were developed  
10 using data collected during the special cost study (discussed above), and data  
11 collected on volumes processed using the weight averaging method at  
12 experiment sites during a twelve-month data collection phase at each site.

13 The wage rate used in this study is the Commission's Docket No. R97-1  
14 estimate, adjusted for actual FY 1998 wages and then adjusted to reflect the  
15 new clerk/mailhandler wage agreements. The actual FY 1998 wage rate<sup>7</sup> for  
16 Total Cost Segment 3 clerks/mailhandlers, excluding Remote Encoding Centers  
17 (REC), is \$25.33. The percentage increase in the total Cost Segment  
18 clerks/mailhandlers wage rate from FY 1998 to FY 1999, which includes wage  
19 increases, COLA, and health benefits, is estimated to be 3.85 percent (from  
20 \$24.94 to \$25.90). Applying this percentage increase to the non-REC wage rate,

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<sup>7</sup> The actual FY 1998 wage rate as well as the estimated increases for FY 1999 and FY 2000 were obtained from the Product Finance unit and the Budget and Financial Analysis unit within Finance, USPS Headquarters.

1 the non-REC FY 1999 wage rate is estimated to be \$26.30. However, if the  
2 renewal request is approved (Docket No. MC99-1), the permanent nonletter-size  
3 BRM rates may not go into effect until as late as March 1, 2000. Therefore, the  
4 wage rate used in the cost estimates presented in this testimony estimates the  
5 impact of wage increases, COLA, and health benefit increases through FY 2000.  
6 With an estimated 2.93 percent increase in the wage rate in FY 2000, the  
7 estimated non-REC wage rate in FY 2000 is \$27.07, which is the wage rate used  
8 in this study.

9 The piggyback factor for BRM Units developed from the CRA is used in  
10 this model. Because the 1998 CRA was not available at the time this filing was  
11 prepared, the 1997 CRA piggyback factor was used; this is the same piggyback  
12 factor used by the Commission in Docket No. R97-1 (see PRC-LR10, Chapter  
13 IV, page 2).

#### 14 15 **D. Estimated Costs of Weight Averaging**

16 Two sets of cost estimates are provided. In the first set, the cost  
17 estimates reflect the workload associated with the 20-sack sample used during  
18 the experiment. In the second set, the cost estimates reflect the workload  
19 associated with the recommended 10-sack sample, as discussed above.

20 In each set, both the per-piece costs associated with daily bulk weighing  
21 and the fixed costs associated with the billing and accounting procedures  
22 specific to weight averaging and the sampling workload for each AP are  
23 presented. The overall costs reported are calculated as a volume weighted



average of the costs at each of the three experiment sites at which costs were studied.

#### **i. Costs under the experiment**

Table 3 shows the cost estimates for the weight averaging procedures as designed for the experiment. As this table shows, the per-piece cost associated with daily bulk weighing is \$0.0054, and the cost associated with the accounting and sampling workload is \$646.84 per AP.

Both the per-piece and fixed AP costs are considerably lower than those estimated in Docket No. MC97-1 (\$0.0151 and \$0.0104 per piece and \$2,441 and \$2,424 per AP respectively for the two weight averaging sites analyzed in Docket No. MC97-1 (Exhibit USPS-T-2H in USPS-T-2)). The lower costs reflect additional cost savings realized as a result of using a computerized system to record, calculate and track data.

#### **ii. Costs under recommended sample size**

Table 4 shows the cost estimates for the weight averaging procedures as proposed for the permanent nonletter-size BRM classification. As this table shows, the per piece cost associated with daily bulk weighing remains \$0.0054, but the cost associated with the accounting and sampling workload is reduced to \$442.82 per AP.

**TABLE 3:**  
**Costs for Weight Averaging – Experiment Procedures**  
**(20 sample sacks per sample period)**

		Average across sites	Explanation
Per Piece Cost (daily weighing)	Daily Weighing (time in minutes)	68.38	[1] Cost Survey (adjusted to reflect average daily workload over data collection period)
	Average daily pieces	8,288	[2] Experiment data collection results
	Average number of pieces weighed per hour	7,365.7	[3] [2] / ([1] / 60)
	Daily hours per piece	0.00014	[4] ([1] / 60) / [2]
	Wage Rate	\$27.07	[5] R97-1, PRC-LR10, adjusted to reflect FY1999 APWU wage agreement (see text: Section IV, part D)
	Attributable cost per piece	\$0.0037	[6] [4] * [5]
	Piggyback factor	1.4624	[7] R97-1, PRC-LR10 (Chapter IV, page 2)
	Cost per piece (daily weighing)	\$0.0054	[8] [6] * [7]
Fixed Cost Per AP (billing and sampling)	Average number of pieces sampled per AP	4,838	[9] Experiment data collection results
	Daily billing time (time in minutes per day)	14.48	[10] Cost Survey
	Sampling (time in minutes per AP)	618.47	[11] Cost Survey (adjusted to reflect average daily workload over data collection period)
	Average number of pieces sampled per hour	491.9	[12] [9] / [11]
	Total time per AP for non-volume variable activities (in hours)	16.34	[13] ([10] * 25 + [11])/60
	Wage Rate	\$27.07	[14] R97-1, PRC-LR10, adjusted to reflect FY1999 APWU wage agreement (see text Section IV, part D)
	Attributable cost per AP	\$442.32	[15] [13] * [14]
	Piggyback factor	1.4624	[16] R97-1, PRC-LR10 (Chapter IV, page 2)
	Fixed Cost per AP	\$646.84	[17] [15] * [16]

**TABLE 4:**  
**Costs for Weight Averaging – Recommended Procedures**  
**(10 sample sacks per sample period)**

		Average across sites	Explanation
Per Piece Cost (daily weighing)	Daily Weighing (time in minutes)	68.38	[1] Cost Survey (adjusted to reflect average daily workload over data collection period)
	Average daily pieces	8,288	[2] Experiment data collection results
	Average number of pieces weighed per hour	7,365.7	[3] [2] / ([1] / 60)
	Daily hours per piece	0.00014	[4] ([1] / 60) / [2]
	Wage Rate	\$27.07	[5] R97-1, PRC-LR10, adjusted to reflect FY1999 APWU wage agreement (see text: Section IV, part D)
	Attributable cost per piece	\$0.0037	[6] [4] * [5]
	Piggyback factor	1.4624	[7] R97-1, PRC-LR10 (Chapter IV, page 2)
	Cost per piece (daily weighing)	\$0.0054	[8] [6] * [7]
Fixed Cost Per AP (billing and sampling)	Average number of pieces sampled per AP	2,419	[9] Experiment data collection results
	Daily billing time (time in minutes per day)	14.48	[10] Cost Survey
	Sampling (time in minutes per AP)	309.24	[11] Cost Survey (adjusted to reflect average daily workload over data collection period)
	Average number of pieces sampled per hour	491.9	[12] [9] / [11]
	Total time per AP for non-volume variable activities (in hours)	11.19	[13] ([10] * 25 + [11])/60
	Wage Rate	\$27.07	[14] R97-1, PRC-LR10, adjusted to reflect FY1999 APWU wage agreement (see text: Section IV, part D)
	Attributable cost per AP	\$302.81	[15] [13] * [14]
	Piggyback factor	1.4624	[16] R97-1, PRC-LR10 (Chapter IV, page 2)
	Fixed Cost per AP	\$442.82	[17] [15] * [16]

## **Appendix – Description of Weight Averaging Software**

The Weight Averaging software designed by Christensen Associates is programmed in Visual Basic 5.0. The software requires a Pentium-based personal computer (PC) with Windows 95 or Windows NT 4.0 to run. It also requires that an electronic scale be linked to the PC via a serial port. The Weight Averaging software requires third-party software that enables communication between the scale and the Weight Averaging software.

Data on daily bulk weights, sample pieces, and sample sacks are stored in tables in a Microsoft Access database. The software uses these tables to calculate daily postage and fees due, and to calculate the conversion factors. This database also has tables to track historical conversion factors, current conversion factors, daily total activity, and the distribution of sample pieces for the most recent sample period. The software uses the data in these tables to generate reports. Another Access database stores information used by the program to determine when a sampling period begins and ends, what the current postal rates and fees are, and what the site-specific settings for the software are. The program uses the system time and date to start and end sampling periods as well as to know when to update conversion factors. There are various security measures coded into the Weight Averaging software to ensure that the data, once entered, are not tampered with.

The software is programmed to randomly select sample sacks each sample period. Each sample week, the target number of sacks is twenty, or four per day (to evenly distribute the sampling workload across the sample week, and

1 to ensure that sample pieces from each day of the week are selected). The  
2 program determines the average number of sacks received on the same  
3 weekday for the most recent three weeks. (For example, on a Tuesday, the  
4 program would determine the average number of sacks recorded over the  
5 previous three Tuesdays). The program then divides this number by four (the  
6 target number of sacks), and uses the integer value of the resulting number as  
7 the skip rate.

8       A random number start less than or equal to the skip rate is used to  
9 determine the first sack selected as the clerk enters sack bulk weights. The  
10 software informs the clerk through a pop-up message box that the sack just  
11 entered is the first sample sack. The program then selects the nth sack entered  
12 after the first sample sack as the next sample sack, where n is the skip rate  
13 determined earlier.<sup>8</sup> This algorithm is repeated as long as sack bulk weights are  
14 entered that day. Therefore, if the volume of mail on a particular day is heavier  
15 (or lighter) than the average volume for the same weekday over the most recent  
16 three weeks, more than (or less than) four sacks may be selected. The clerks  
17 are instructed to sample all the pieces in *all* the sacks selected, not just the first  
18 four sacks.

19       During the experiment, Christensen Associates is the system  
20 administrator for the weight averaging software. Christensen Associates  
21 provides on-site training for clerks and supervisors at each experiment site for

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<sup>8</sup> The algorithm has recently been changed so that a random sack within the next n sacks is selected for sampling.

1 both the software operation and the sampling procedures. Manuals on the  
2 software use are provided to each site. Christensen Associates is providing help  
3 by telephone to the sites throughout the experiment. At the end of each sample  
4 period, each site copies the database with recorded sack and piece information  
5 onto a disk and sends it to the system administrator for analysis.

**Exhibit USPS-3A – Schedule for Sampling at Weight Averaging Sites**

	Data Collection Phase Sample Periods (in week beginning)		
Sample Period	Mailer 1	Mailer 2	Mailer 3
1	October 6	October 13	October 27
2	November 17	November 17	November 17
3	December 15	December 22	December 8
4	January 12	January 12	January 19
5	February 23	February 16	February 9
6	March 2	March 2	March 16
7	March 30	April 20	April 13
8	May 11	May 11	April 27
9	May 25	May 25	July 6
10	June 29	June 29	July 27
11	July 20	August 10	September 7
12	August 10	August 31	September 28
13	September 14	September 21	October 19

## **Exhibit USPS-3B -- Cost Survey Instructions and Form**

### **SPECIAL STUDY**

#### **Nonletter-Size BRM Experiment**

##### **General Instructions**

- All personnel involved in rating and billing of nonletter-size BRM for [Mailer name here] on all tours should record their times for each day of the two-week study period. Personnel who should participate in this study include: clerks doing daily weighing or sampling, clerks entering data into the PERMIT system, clerks doing other accounting, and supervisors.
- Record all times involved in rating and billing for [Mailer name here]'s nonletter-size BRM only.
- The two-week study period for your site is [site's cost study period here]
- Accurate recordings are essential to the development of the proper rate structure for this mail. Data from your site will be combined with data from other participating sites. No individuals or offices are being evaluated based on these data. Data for each individual and office will be kept strictly confidential.

##### **Instructions for Recording Times**

- At top of the form, record the date, and indicate whether the times you are filling out are from a Postal time clock or regular clock (this will tell us whether a time recorded as 12:50 p.m. is really half-past noon, or ten minutes before 1 p.m.).
- Employee initials are to be filled out only as a control that everyone involved in this mail flow has recorded times, not a check on how individual employees perform.
- For each procedure, record the start and end times when you did that procedure. For those activities where you do them at several different points during your tour, use the multiple start/end columns for each time.
- If an activity is not specified, but is related to rating and billing of [Mailer's name here]'s nonletter-size BRM, use the "Other" row, and explain what the activity is.



- If multiple employees are involved, a separate sheet can be used for each, or they can be entered on the same sheet, but clearly mark to show individual times.
- Use separate sheets for each day of the study.

Instructions for Supervisor or Study Coordinator

- Each day, collect all forms. Make sure that all appropriate personnel are completing the forms.
- Send the study forms and a copy of the daily reports (with sack weights and total postage due) each day by Priority Mail (you can use the mailing labels provided).

## FORM WA -- WEIGHT AVERAGING

Record the start and end times for each activity associated with procedures used for weight averaging of [Mailer's name here]'s nonletter-size BRM. Multiple start/end columns are provided in case the activity is done in stages. See Instructions for further information.

**Site:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Circle one:** Postal clock time      Regular clock time

[illegible]